

0.a. Goal

Goal 13: Take urgent action to combat climate change and its impacts^[1]

¹Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change. [1](#)

0.b. Target

Target: 13.2 Integrate climate change measures into national policies, strategies and planning

0.c. Indicator

Indicator: 13.2.2 Total greenhouse gas emissions per year

0.e. Metadata update

March 2021

0.g. International organisations(s) responsible for global monitoring

UN Climate Change (UNFCCC Secretariat)

1.a. Organisation

UN Climate Change (UNFCCC Secretariat)

2.a. Definition and concepts

Definition, rationale and concepts:

The ultimate objective of the Climate Change Convention (UNFCCC) is to achieve the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Estimating the levels of greenhouse gas (GHG) emissions and removals is an important element of the efforts to achieve this objective.

In accordance with Articles 4 and 12 of the Climate Change Convention and the relevant decisions of the Conference of the Parties, countries that are Parties to the Convention submit national GHG inventories to the Climate Change secretariat. These submissions are made in accordance with the reporting requirements adopted under the Convention, such as the revised “Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I:

UNFCCC reporting guidelines on annual greenhouse gas inventories” (decision 24/CP.19) for Annex I Parties and “Guidelines for the preparation of national communications for non-Annex I Parties” (decision 17/CP.8). The inventory data are provided in the annual GHG inventory submissions by Annex I Parties and in the national communications and biennial update reports by non-Annex I Parties.

The Paris Agreement adopted in 2015 marks the latest step in the evolution of the UN climate change regime and builds on the work undertaken under the Convention. Its central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. The Agreement also aims to strengthen the ability of countries to deal with the impacts of climate change.

2.b. Unit of measure

Mt CO₂-equivalent

3.a. Data sources

- Annual GHG inventory submissions from Annex I Parties
- National communications (NC) and/or Biennial update reports (BUR) from non-Annex I Parties

3.b. Data collection method

- Annex I GHG inventories are submitted through the CRF Reporter application. Information are automatically imported in the UNFCCC Data Warehouse.
- Information for non-Annex I Parties are manually extracted from their NC and/or BUR and stored in the UNFCCC Data Warehouse using Excel import sheets.

3.c. Data collection calendar

See above

3.d. Data release calendar

The UNFCCC reporting guidelines on annual inventories for Annex I Parties require each Annex I Party to provide its annual GHG inventory by 15 April each year.

The national communications (NCs) of non-Annex I Parties are usually submitted every four years; the biennial update reports (BURs) every two years.

3.e. Data providers

Parties to the UNFCCC

3.f. Data compilers

UN Climate Change (UNFCCC secretariat)

3.g. Institutional mandate

- Reporting requirements for Annex I Parties – <https://unfccc.int/process-andmeetings/transparency-and-reporting/reporting-and-review-under-the-convention/greenhousegas-inventories-annex-i-parties/reporting-requirements>
- Reporting requirements for non-Annex I Parties – <https://unfccc.int/process-andmeetings/transparency-and-reporting/support-for-developing-countries/guidelines-andmanuals-for-the-preparation-of-non-annex-i-national-reports-and-international#eq-5>

4.a. Rationale

See 2a.

4.b. Comment and limitations

Data is limited to Parties that submit their GHG inventories. As the reporting requirements for non-Annex I Parties are not as rigid as those for Annex I Parties, information for these Parties are available usually only for selected years.

The annual timing of submission of updated inventory reports is very close to publication date of annual SDG progress reports.

4.c. Method of computation

Total GHG emissions are calculated as the sum of emissions of direct GHGs: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), sulphur hexafluoride (SF₆) and nitrogen trifluoride (NF₃), measured in units of CO₂-equivalent, by using a common weighting factor, the so-called Global Warming Potentials (GWP). In accordance with the latest reporting guidelines for Annex I Parties under the UNFCCC, the GWP values to be used are those for the 100-year time horizon listed in Table 2.14 of the IPCC Fourth Assessment Report (<https://www.ipcc.ch/report/ar4/wg1/>). However, non-Annex I Parties should use the GWP provided in the IPCC Second Assessment Report (<https://www.ipcc.ch/report/ipcc-second-assessment-full-report/>) based on the effects of GHGs over a 100-year time.

4.f. Treatment of missing values (i) at country level and (ii) at regional level

- At country level

Availability of data depends only on what is received from Parties.

- At regional and global levels

n/a

4.g. Regional aggregations

n/a

4.h. Methods and guidance available to countries for the compilation of the data at the national level

- Reporting requirements for Annex I Parties – <https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/greenhouse-gas-inventories-annex-i-parties/reporting-requirements>
- Reporting requirements for non-Annex I Parties – <https://unfccc.int/process-and-meetings/transparency-and-reporting/support-for-developing-countries/guidelines-and-manuals-for-the-preparation-of-non-annex-i-national-reports-and-international#eq-5>
- 2006 IPCC Guidelines for National Greenhouse Gas Inventories – <https://www.ipcc-nggip.iges.or.jp/public/2006gl/>
- Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories – <https://www.ipcc-nggip.iges.or.jp/public/gl/invs1.html>

5. Data availability and disaggregation

Data availability:

Based on national inventory reports submitted to the UNFCCC secretariat, total greenhouse gas (GHG) emissions in Gt CO₂ eq of developed countries (43 Annex I Parties under UNFCCC) from 1990 onwards and developing countries (153 non-Annex I Parties under UNFCCC) from 2000 onwards. Annex I Parties submit their GHG inventories annually (submission deadline is 15 April), whereas non-Annex I Parties submit their national communications/biennial update reports only periodically.

Time series:

Data for Annex I Parties are available from the base year (usually 1990) up to two years before the inventory is due. Data available for non-Annex I Parties are usually only for selected years.

Disaggregation:

Data is disaggregated by Annex I and Non-Annex I Parties to the UNFCCC

6. Comparability/deviation from international standards

Sources of discrepancies:

n/a

7. References and Documentation

- [UNFCCC reporting guidelines on annual inventories for Parties included in Annex I to the Convention](#)
- [Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention](#)
- [Greenhouse gas data interface](#)